PAN AMERICAN fisherman

AND

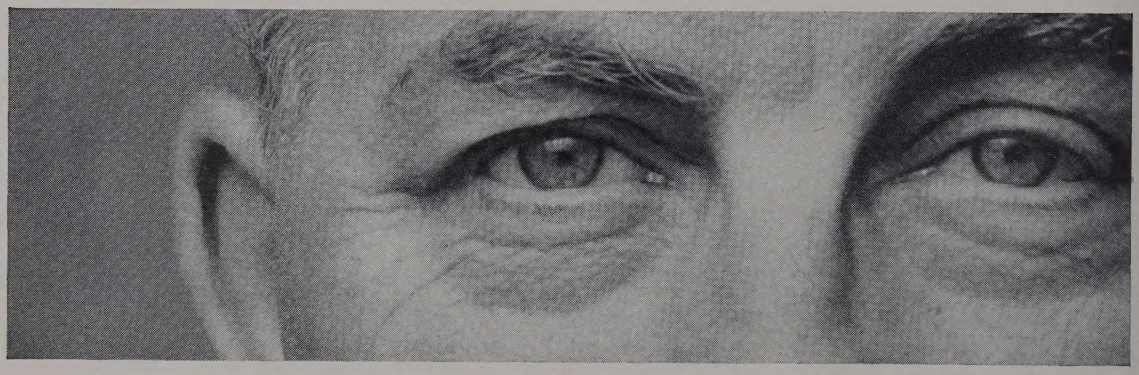
OUTDOOR WEST

ESTABLISHED 1947

☆

March 1957

Are your chances against cancer any better today?



The answer's yes . . . IF. A few years ago we could cure 1 in every 4 cases. Today, we're doing better . . . 1 in every 3. So . . . why that big IF? Because the odds against cancer depend on YOU.

Only YOU can give us the time we need . . . the head start we need to lick cancer before it gets hold. Only you can look for the 7 danger signals . . . dash to your doctor if you spot one . . . and no matter how well you feel, come in for an annual checkup. Only *you* can save your life . . . by checking with your doctor in time!

Only YOU can give us the money we need. Money for research, money for service to help ease pain and bring comfort to needy patients, money to save lives by alerting the public to vital facts about cancer.

AMERICAN CANCER SOCIETY

FIGHT CANCER WITH A CHECKUP AND A CHECK!

For the Lenten Season . . .

A BIGGER AND BETTER FISHERY MARKET

MOST fishery interests agree that things are looking up for the future. Some of our most troublesome problems are being recognized and helpful solutions searched out—by both business and government authorities. You can read about them on other pages in this magazine.

With the American economy in general on a high level, and most lines of business apparently destined to remain that way, we believe that the fisheries situation also will shape up quite satisfactorily in the days ahead.

Our efforts now and always are dedicated to the creation of bigger and better markets for canned tuna, and to advance the best interests of the entire tuna industry.

CALIFORNIA FISH CANNERS ASSOCIATION INC.

Breast-O'-Chicken Tuna, Inc. · California Marine Curing & Packing Co.

Coast Fisheries (Division of the Quaker Oats Company)

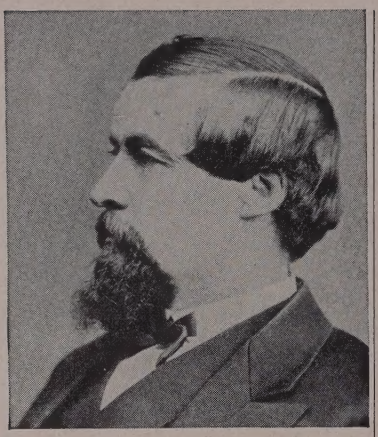
Franco-Italian Packing Company, Inc.

Pan-Pacific Fisheries, Inc. · South Coast Fisheries, Inc.

Star-Kist Foods, Inc. · Sun Harbor Packing Company

Chicken-of-the-Sea, Inc.

West Coast Packing Corporation · Western Canners Company



"I looked down into my open grave"

"MR. SENATOR ROSS, HOW SAY YOU?"

In the silence of the Senate chamber, the freshman Senator from Kansas looked down, as he put it, into his own grave.

On deliberately trumped-up charges, the fanatic leaders of Ross's party were trying to vote President Johnson out of office—because Johnson stood between them and their revenge on the defeated South.

Ross, they knew, also wanted to punish the South. Still, they expressly invited him to vote "guilty" or face political suicide.

Now, on that morning in 1868, the verdict hung completely on his vote. Falteringly, then loudly, he gave it: *"Not guilty!"*

That was sheer moral principle speaking. Edmund Ross refused to join a move to wreck the historic powers of the Presidency. For this, he lost his future, lost his good name—but saved our democracy.

Into the fabric of America is woven the steel-tough moral fiber of men like Edmund Ross. Braver than battle courage, it has helped America become so strong, that, today, one of the world's greatest guarantees of security is U.S. Savings Bonds.

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* * *

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Report on a Year of Activities

ACCORDING to the annual report of the Fish and Wildlife Service for the year ending June 30, 1956, the Service lists these activities among others:

Acquired 41,152 acres of land for wildlife conservation purposes with another 15,422 acres pending title conveyance—

Aided in the establishment of the first voluntary standard of grade and condition for fishery products—

Increased its salmon, trout and warm-water fish production 31 percent by weight—

Continued its vigorous salmon restoration program in Alaska—

Began large-scale testing of several electronic devices used in fish guiding, counting and other fishery research—

Made numerous studies relative to shellfish—

Found two promising selective poisons for use in sea lamprey control out of 4,600 compounds tested over a period of time—

Conducted numerous oceanic research problems for the benefit of the fishing industry—

Was host to nearly seven million visitors at the various wildlife refuges—

Reported on the fish and wildlife aspects of 344 water development projects proposed by other Federal agencies—

Through the Federal Aid in the Fish and Wildlife Restoration program helped 17 States create 23 new fishing lakes and, in line with the congressional amendment to the Pittman - Robertson Act authorizing the distribution of the $13,500,000 backlog of the game restoration funds in five equal annual installments—apportioned the first installment to the States.

Through exploratory fishing cruises discovered a yellowfin tuna resource in the southern part of the Gulf of Mexico, located a red shrimp resource in the deep waters of the South Atlantic and a fishing ground for large lobsters in New England deep water, found a new ocean perch fishing area and made special studies of the Maine sardine fishery—

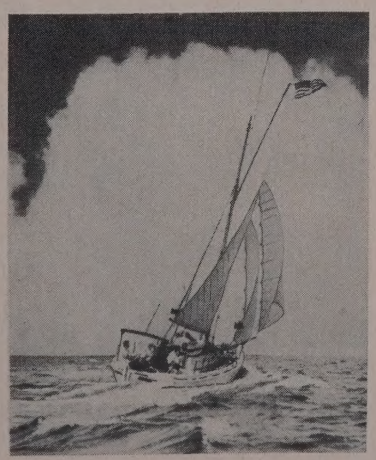
Conducted numerous research projects on the effects of insecticides and pesticides on fish and wildlife, worked on the development and improvements of repellents as a management tool; explored for newer and better methods of warehouse and field rodent control; studied mosquito contool; explored for newer and better marsh preservation—

Through a technological research program the Service isolated certain chemical components of fish oil which may pave the way for the creation of many new products.

Two fishery motion pictures in sound and color were completed during the year and a third started. These films are financed by interested segments of the fishing industry.

Daily fish market reports were released in key areas from seven strategically located reporting offices. Fish transportation and importation problems were studied. Monthly bulletins were issued on landings in 12 coastal States and Ohio on Lake Erie.

Vigorous restoration measures were continued in the Alaska salmon fisheries. The pink salmon fishery in Prince William Sound was closed completely and trap fishing in southeastern Alaska reduced by 50 percent; more protection was given salmon in the various bays, and the stream guard program was intensified.



Restrictions were invoked and lake fertilization experiments conducted in red salmon areas.

The Pribilof seal harvest was 65,638 skins; 52,957 skins were sold at auction for $4,849,610.

Research on the Atlantic salmon, shad and striped bass continued in eastern waters. In the Northwest considerable laboratory research was done on electrical fish guiding devices to divert salmon into bypass channels, and on other devices to protect young salmon from squawfish.

Instruments which record the passage of fish through underwater orifices, giving the direction of the movement, were perfected and put into commercial production. Intensive studies of fish behavior during migration were made at the Fisheries-Engineering Research Facility established at Bonneville Dam with the cooperation of the Corps of Engineers. A "sonic tracker," which when attached to a fish sends signals by which the path of the fish can be followed, was developed.

Extensive studies of salmon races were made in accordance with the program outlined by the North Pacific Fisheries Commission.

Studies of the king crab in Bristol Bay, the oyster in Long Island Sound, raft culture for oysters in Massachusetts, soft clams in New England and the role of chemical elements in the metabolism of marine organism were among the other research projects.

Major attack on the sea lamprey which has ruined fisheries in three of the Great Lakes was centered in Lake Superior where lake trout are still commercially important. All lamprey work was done in accordance with the general program of the International Great Lakes Fisheries Commission.

(Continued on page 17)

Handling FISH to Preserve QUALITY

TO THE qualified wine taster, there is a wide range of aroma, bouquet, color, and flavor within the upper and lower limit of acceptability. Small wonder, then, that with a food commodity as diverse in character as fishery products, there is present a similar range in flavor, aroma, texture, and color. This fact is forcefully brought out when restaurant managers and home economists attempt to introduce a new product or a new method of preparation for an established product.

The delicate and ephemeral aroma and flavor characterizing each individual member of the large family of fishery products as a treat unto itself is a zealously preserved quality in many countries, such as Denmark where fish often are purchased alive. The lavish care taken to supplement and enhance these characteristics with expert cookery accounts in large part for the "rave" notices Americans give fish eaten there.

The large group of persons who do not eat fish because they do not like it can never be won over by offerings of inferior servings no matter at what low price. They can be interested when there is offered something of sufficient merit to stimulate their appetites. Then comes the opportunity to open up the wide demand for tasty variety that fishery products are uniquely able to supply. Let us therefore discuss first the various pathways of quality deterioration and methods of minimizing such losses prior to freezing.

Causes of Deterioration

The dictionary defines "spoil" as "to cause to decay and perish or to become of less or no use, value or the like." There are, in other words, several degrees or stages in the process of spoilage. Often there may be wide differences in the quality of fish offered for sale.

To be in a position intelligently to preserve and protect fishery products from this loss, we must have a knowledge of the factors contributing to it. In this section, factors applicable from the point of capture to, but not including, preservation by freezing will be considered.

Quality loss in fish and shellfish is attributable to one or all of three principal causes: (1) enzymatic or autolytic action. (2) oxidative action, and (3) bacterial action. The order of onset for these, and their relative importance in causing deterioration, may vary with such allied considerations as species and maturity, and method used in the capture and in the dressing and icing of the fish.

Enzymatic Action

All living animals—of which fish, mollusks, and crustacea are a part—derive essential materials for growth and maintenance through the digestion and assimilation of plants or of other animals. In the digestive fluids are agents called enzymes, some of which attack fats, others carbohydrates, and still others the protein portions of the food.

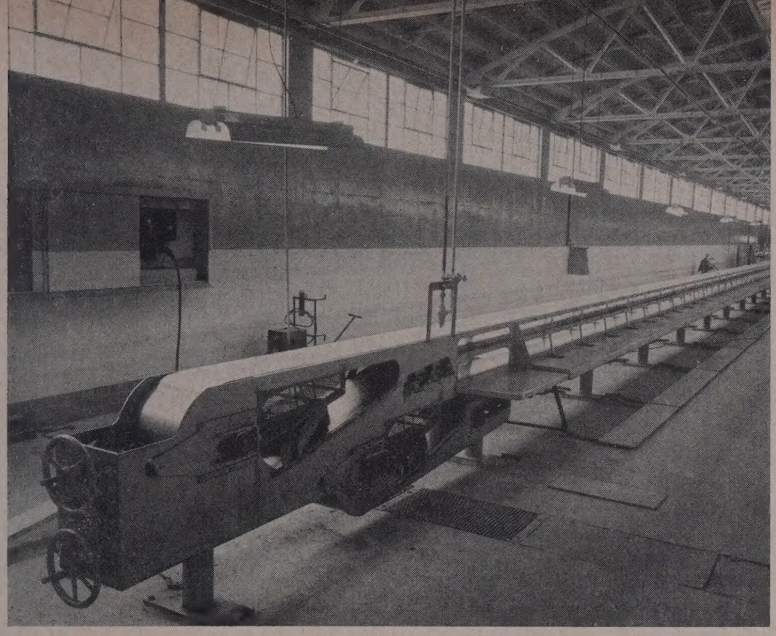
When the animal dies, the balance between the processes of body maintenance is upset. The enzymes, instead of acting on the food normally taken in, continue actively to digest any of the particular types of materials—such as fats, carbohydrates, or proteins—which they are capable of breaking down. The result is a reversal of the normal process of digestion, assimilation, growth, and maintenance. Then enzymatic decomposition sets in; the rate and extent of alteration may be only controlled by some effective preservation method, such as use of heat, cold, or dehydration.

The chief observed effects of enzyme action are the softening of the fish flesh. In the case of some species, however, such as herring taken with food in the digestive tract, the autolytic action is so rapid that the belly walls may be pierced and the visceral mass converted to a semifluid state. Salmon under similar conditions may develop the discoloration called "belly-burn" where visceral organs have been in contact with the abdominal walls.

Oxidative Action

A second cause for deterioration in quality of fish prior to freezing results from oxidation and rancidity. Here again there is overlapping with enzymatic and bacterial activities. The fish contains fatty tissue that is protected during life by counterbalancing agents. At the death of the fish, the fat is attacked by the enzymes that are capable of doing so. Bacterial enzymes likewise react with the fat in the moist tissue.

FROM THE FISHING BOAT . . .



. . . TO THE CANNERY — QUALITY COUNTS

The degree of susceptibility among fatty fish varies with species: mackerel, herring, and some of the salmon are quite vulnerable, whereas sablefish are quite resistant. Fish of relatively low fat content, such as cod or haddock, may develop rancidity, although at a much slower rate. Oxidation, besides causing rancidity, can cause other changes in fish. The fading of pigments that is observed in salmon or ocean perch and the development of off-color, such as in the yellowing of halibut and the browning of haddock, are results of oxidation.

Bacterial Action

Bacteria are usually the most important causes for deterioration in fish, as in other protein foods. They are present in air, water, and soil in innumerable forms, shapes, and species, each with a characteristic method of attacking which, although we do not see the organism with the naked eye, can be noted by the odors, flavors, or colors imparted to material on which they are acting. The effects of bacteria on fish may be described at three principal stages in the taking and processing prior to freezing: (1) in the water, (2) aboard the vessel, and (3) at the shore plant.

Since bacteria are present in water, the natural environment of fish, we may expect to find bacteria on exposed surfaces. The normal fish, for example, may have a heavy population of bacteria on its skin, gills, and alimentary-canal surfaces. As long as the fish is in robust health, with no major breach in the skin tissues, which act as a barrier to attack, the bacteria can be kept from doing any serious damage. At death, however, the fish ceases to maintain the barriers to bacterial assault. Its tissues offer excellent material upon which the bacteria can feed. The extent of spoilage is determined, in large part, by (1) the initial load of bacteria, (2) the temperature of the fish flesh, (3) the lapse of time, post-mortem, and (4) the type of sanitary procedures practiced.

The number and type of bacteria found at time of capture varies with season, locality, species, water temperature, and method of capture. Analyses of sea water—taken at the surface, the mid-water, and the bottom levels in areas of fishery activities—show that the heaviest bacterial population is found in the bottom mud. The effect of the gear enters into the problem, too. As the fish are often squeezed by weight of the mass in the trawl hoisted on deck, the contents of the intestines are expressed, adding to the contamination contributed by the skin and the gill-surface bacteria.

Icing of fish is not a cure-all for quality preservation, but it does offer a considerable measure of protection from bacterial action. The importance of prompt and proper icing cannot be overstressed. Since a temperture drop of 5 degrees an reduce the rate of spoilage by 50 percent, it is very important to bring fish, after capture, rapidly to a suitable chill temperature of 32° to 34° F. Fish that can be kept for 14 days and still be edible at 32° F. can be kept for only 4½ days at 50° F. and for only 1½ days at 69° F.

Fish protected aboard the vessel by careful handling, thorough icing, and good sanitation practices are next subjected to hazards of bacterial contamination during unloading, sorting, and processing ashore. The same factors need to be considered here: namely, time, temperature, care, and sanitation.

In the transfer from vessel to plant, the use of unclean baskets, boxes, tanks, conveyors, or other equipment, or the inserting of tines of the fork into the edible portion of the flesh offers opportunity for contamination. If the fish are allowed to remain longer than the absolute minimum time unrefrigerated prior to the next processing step—and at all intermediate stages — bacterial growth is rapid. All equipment coming in contact with the fish should be kept free of flesh particles and of slime. The use of a good detergent to remove soil, followed by a wash-down with water containing 25 p.p.m. of residual chlorine, is an acceptable procedure.

This is a condensation of a recent bulletin issued by the Fish and Wildlife service, U. S. Department of the Interior.

Japan to Import Frozen Shrimp from Red China

An application by the four leading Japanese fishing firms to import frozen shrimp from Communist China has been approved by the Japanese Ministry of International Trade and Industry. The shrimp will be imported on a barter basis, 2,300 cases of Japanese king crab meat in exchange for 100 tons of Chinese frozen shrimp.

The Japanese government approved the application with the proviso that the shrimp be packed in blocks of 1.1 pounds and 44 pounds and prepared in a specified manner. These stipulations were made in order to facilitate re-export. The Ministry was reported anxious to prevent the re-export of these frozen shrimp to the United States, according to the United States Embassy in Tokyo.

National Canners Meet

There was a birthday party in Chicago last month attended by 18,000 guests. Fifty years ago the National Canners Association first saw the light of day in a tiny one-man office over a blacksmith shop in Bel Air, Maryland.

Today this trade association of the commercial food canners of America and the Territories is the official spokesman for a tremendous industry whose products are on every pantry shelf, to the tune of about 4½ billion dollars worth a year; occupies three modern office buildings, and employs a staff of more than 100 scientists and other professionals.

The N.C.A., under the leadership of its canner president—William U. Hudson, Oakland, Calif., vice president in charge of production of the Gerber Products Company—held its Golden Anniversary Convention, and the four-day conclave was dotted with meetings, skits, entertainment, films, broadcasts, telecasts, souvenirs, commemorative plaques, medals, toasts, nostalgia, along with constructive speeches and panels on scientific research, public service, the state of the industry and of the Nation.

Miss Canned Foods of 1907, in the costume of her time, paraded alongside her beauteous sisters — Miss Canned Foods of 1957 and Miss Futuristic Canned Foods. Among the 18,000 celebrants were not only canners, but food brokers and retail store executives, the manufacturers of the tin cans, glass jars, paper labels, automatic machinery and other supplies canners use to put up foods for the public.

Keynote speakers were The Honorable Howard Pyle, ex-Governor of Arizona and now President Eisenhower's Deputy Assistant in charge of Administrative liaison and governmental relations, and J. Roger Deas, New York City, well-known industry orator of the American Can Company.

These speakers helped remind the canners that since 1907 their industry has grown from an annual production of about 40 million cases or 960,000,000 containers to last year's record pack of more than 680 million cases or 22½ billion cans and jars. They mentioned the innovations that canned foods have brought to the American public—fruit and vegetable juices, baby foods, dietetic foods (cradle to grave feeding). They also pointed out that the National Canners Association was the first to establish scientific laboratories for its industry, and now operates three—in Washington, D. C., Berkeley, Calif., and Seattle, Wash.; that it helped implement the first Pure Food Law of 50 years ago and works constantly with the Food and Drug Administration on quality standards for canned foods; that compared to 300 canners in its first enrollment there are today some 3,000 canneries; that canned foods were the first to be packaged in consummer sizes, replacing the barrel and basket bulk foods the groceries featured in 1907; from about 30 canned items the record now lists more than 600 different kinds. They took glory over the fact that canners were the first food manufacturers to investigate and discover high retention of nutrients in their products.

"As we celebrate our Golden Anniversary there are golden opportunities ahead," summed up William U. Hudson, Oakland, Calif., vice president in charge of production of the Gerber Products Company and President of the National Canners Association, who presided over the opening session of this four-day meeting.

"The past 50 years has seen this industry develop from one of crude black iron equipment and stove bolts, with large masses of unskilled labor to one of precision machines and stainless steel and the need for highly skilled and technically trained people," Mr. Hudson stated. "This evolution will continue at an accelerated pace and the rewards will go to those who do the best job in skillful planning and scheduling, better industrial relations and training, better organization, and the full use of the results of research in both the scientific and merchandising field," he continued.

J. Roger Deas, New York City, well-known trade orator with the American Can Company, was the spellbinder for the observance of the Association's birthday. In a scholarly review of the accomplishments in science and economy of the canning industry entitled, "Golden Anniversary—Legacy and Challenge," Mr. Deas complimented the canners for having "freed the farmer and fisherman from dependence on the tenuous fresh food market, the transporter and merchandiser from the hazards of spoilage and waste, the armed forces from foraging and Civil Defense officials from worry that our food stocks be contaminated by radiation. Of greatest significance, he said, "you have made mothers, housewives and career girls, citizens first class, emancipating them from their perennial enslavement to the kitchen."

Howard Pyle, former Governor of Arizona, and now Deputy Assistant to President Eisenhower, brought a message from The White House to the canners. Appealing to them as citizens to exert every effort to keep our economy sound, he appealed for an increase of interest and understanding of the importance of Congress as a body in our system of Government. "Is it possible that somewhere along the line the American public has lost its identification of Congressmen with national policy? Governor Pyle asked. "It's alarming to note," he asserted, "that a certain state cast nearly a million more votes for the President in 1956 than for the Congress in 1954, just two years before. This will not build a Congress, this will not encourage devotion to Congressional service at the head of our government by our best qualified citizens. President Eisenhower's attitude toward the Congress is constitutional in every respect. This should be every citizen's attitude. Here rests the legislative power and the appropriating authority of 'Operation America.' Under no circumstances should it be taken lightly at the polls or elsewhere," he warned.

The Front Cover

Frances McHale indicates fancy figures are in prospect for the tuna industry during the Lenten Season. Holding one of the seven million tuna slated for the Lenten pack is Edwin L. Morris, Director of the Tuna Research Foundation. Morris estimates 100 million cans of tuna will be purchased in the 40-day period.

U. S. COAST AND GEODETIC SURVEY

The Coast and Geodetic Survey, U. S. Department of Commerce, held open house at its ship base on Lake Union, Seattle, on Sunday, February 10, the 150th anniversary of the founding of the Survey. Ships of the Alaska fleet were open to visitors.

Rear Admiral H. Arnold Karo, Director of the Survey, was present. He also was the speaker the next day (Monday, February 11) at a luncheon sponsored by the Survey and the Seattle Chamber of Commerce, marking issuance of the Coast and Geodetic Survey commemorative 3-cent stamp.

The history of the Coast and Geodetic Survey is intimately associated with that of the Pacific Northwest and Alaska. Late in 1855 the Survey volunteered the services of a steamer to assist the Navy's Pacific Squadron in putting down an Indian uprising in Washington Territory. Survey parties were active a century ago, charting Puget Sound channels and mapping the shorelines. In 1867 George Davidson, head of the San Francisco office, made surveys off the Alaska coast even before the United States had formally taken possession of the territory from Russia.

Early in April this year seven ships of the Coast and Geodetic Survey will leave Seattle to do charting in the Aleutians, Prince William Sound, Bristol Bay, and southeastern Alaska.

Tuna on NBC-TV Show

American Can Company's bimonthly television promotion of canned food and containers offered viewers of its March 11 NBC-TV News Show a new recipe for "Tuna Macaroni Bake" and some interesting background information on the development of cans for seafood. Stressing the wide variety of canned fish products now available, Canco points out that the modern convenience of canned seafood is in complete contrast to Lenten seasons of not so many years ago when only families living near the sea could have seafood at its best.

FAWS Reorganization Proposals

A representative group of spokesmen for commercial fishery interests and conservationists met last month with Ross L. Leffler, Assistant Secretary of the Interior for Fish and Wildlife, to formulate a trial reorganization plan. This is to be submitted to the Seretary of the Interior and with his approval will be initiated immediately and then reviewed by the same group near the end of 1957.

Representing industry at the meeting: Tom Sandoz, Columbia River Packers Assn.; Ira Gabrielson, C. R. Guttermuth and Daniel A. Poole, Wildlife Management Institute; Charles E. Jackson, National Fisheries Institute; Harold Cary and W. M. Chapman, American Tuna Boat Assn.; Richard Stroud, Sport Fishing Institute; W. C. Arnold, Alaska Salmon Industry, Inc.; George E. Steele, Jr., National Canners Association; Ernest Swift, National Wildlife Federation; Michael Hudoba, Sports Afield Magazine; and Thomas Kimbel, Colorado Game and Fish Department.

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CONSUMER ATTITUDES *toward* CANNED FISH

By W. R. SIMMONS

HERE are some of the major findings of a study on canned fish whih our organization recently completed for the Fish and Wildlife Service of the U. S. Department of the Interior. The study covered 55 questions about canned fish with results which have been tabulated into some 500 tables.

First as to who uses canned fish, and frozen fish. On the other hand, served it during the past 12 months, we found that almost all households are users, the actual finding being 91.4 percent for the country as a whole. We also found that the figure is over 90 percent for each of the four major regions of the country.

The survey results also indicate that canned fish is not competitive to any considerable degree with fresh and frozen fish. On the other hand, fresh and frozen fish appear to be directly competitive with each other. In each region where the percentage of households using fresh fish goes up, the percentage using frozen fish goes down, and vice versa.

Of course this non-competition between canned fish and other fish is to be expected because the major kinds of canned fish—tuna, salmon and sardines—are not widely used in this country in a fresh or frozen state. To clarify this point we cross tabulated the users and non-users of fresh and frozen fish separately on their use of canned fish. We found a higher percentage of canned fish users among the users of fresh and frozen fish than among the non-users.

Perhaps the most important fact here is that canned fish is a product of almost universal acceptance by American households, with only a small minority finding it unacceptable at least for occasional use.

Since nearly every household is a user, the important question is how much a household uses or how frequently they use canned fish. For the country as a whole, about half the users might be called "regular" users; that is, they served it more than three times in the four weeks prior to the interview.

A relationship that appears many times in various findings of the survey is the existence of a common pattern as between the Northeast and West on the one hand and the South and North Central regions on the other. In this instance the Northeast and West have about 10 percent more of their users in the "regular" category, about half of them in the more than once a week or heavy user class.

An important point about the canned fish market is that the great bulk of canned fish users (83 percent) is concentrated among the 45 percent of American households who are regular servers. In fact, 41 percent of all servings take place in the 15 percent of households who serve it more often than once a week.

More than two-thirds of all servings take place in households that are in metropolitan areas. In fact, in terms of servings per household per week we find the metropolitan area half again as frequent in their usage as the non-metropolitan, averaging about 75 servings per 100 household weekly, against 50 per hundred households in the non-metropolitan areas. It should be noted also that the larger cities of 500,000 and over and the suburbs account together for over half of all canned fish servings in the country.

Family Size and Income

The volume of servings varies with household income. Except for the very lowest income group with less than 3,000 per year, the use of canned fish is almost constant at all income levels. Bear in mind that the lowest group still accounts for almost a quarter of total usage. The highest income group, over $7,000, is the most frequent user. That canned fish is neither an economy food nor a luxury food is evidenced by the substantial usage in the $3-5,000 middle income groups.

We classified our respondents by family size and we found that the number of servings per week increases steadily as the number of persons in the household goes up—from 53 per hundred per week for the two-person household to 83 for the family of six or more. On this basis we also found that households of four or more persons account for over half of all servings in all families.

We cannot assume that every member of the household participates in every serving within the family. In

fact, we know this is not so. It also cannot be assumed that both members of the two-person household eat canned fish every time it is served. However, it does seem reasonable to assume that the amount of product consumed by any household will be proportional to its size. We have worked out this family size analysis by the number of individuals in the family. On this basis the households of four or more persons account for two-thirds of all individual servings. In terms of servings per week, assuming all members were served, we would have a consistent increase—from two servings in the two-person family to five servings in the family of six or more. There seems to be no question but that the larger families not only use canned fish most frequently but also use more of it at every serving.

Where seasonal differences were found, they were almost evenly divided among spring, summer and winter. Only the fall seems to be little favored. So, in the season when one group drops off in consumption, another group picks it up.

Regional Differences

Regional differences in seasonal preference for canned fish usage are about what would be expected in the light of normal seasonal implications. Spring was more highly favored in the Northeast and Central regions with their high concentration of Catholic populations. Incidentally when the data was broken down by religious affiliation, their heavy observance of Lent showed up very strongly. Among those favoring summer the great majority were people living in the metropolitan area where the use of canned fish in salads was most popular.

Use of the three leading types of canned fish—tuna, salmon, and sardines—varies in the four geographic regions. Consistently the Northeast and West show a different pattern of taste preference from that of the Central and Southern regions. For instance:

Tuna: Northeast and West above average. Central and South below average.

Salmon: Northeast and West below average. Central and South above average.

Sardines: Northeast and West below average. Central and South above average.

Though tuna was the most widely served canned fish in all sections, its margin over salmon was much narrowed in the Central and Southern regions.

Where the volume of servings was analysed by type of community, we found much heavier use of tuna in the metropolitan area, while the use of salmon is slightly heavier in the non-metropolitan communities.

With respect to family income we find the use of tuna increases sharply as income goes up, while the use of salmon varies very little among income groups. Yet because there are so many more of them, the families with under $5,000 income account for nearly two-thirds of the tuna market and nearly three-fourths of the salmon market.

Of particular interest to those engaged in marketing a canned fishery product will be the reason non-users of the product give for their non-use. Each respondent who was found not to have served any one of the four major type of canned fish in the previous 12 months was asked why she had not served the product.

The major reason given was that they or their household simply did not like the product; this seems to mean they do not consider it appetizing. The small number who mentioned price indicates that canned fish is not considered a luxury food by most households. However, the lowest income households, large households, farm households and non-white households among the non-users did mention price with greater than average frequency.

Product Findings

About 75 percent of all purchases of tuna are of more than one can. This certainly suggests that a segment of the market might be receptive to a can of tuna about twice the size of the 6 or 7 oz. can now generally distributed; certainly if any appreciable price advantage could be offered with it.

Salads and sandwiches are by far the most popular ways of serving canned tuna, with casseroles a distant third. When asked why they served canned tuna, 70 percent of all users said they liked it. Almost half the tuna users mention the ease, speed and convenience of serving it as a reason why they did so.

Turning now to canned salmon we find that the one-pound can is far more widely used than the 7 oz. can, with average purchase being one or two cans.

Respondents were generally well aware of the differences between pink and red salmon. Purchases were about equally divided between the two kinds in the Northeast and West. The Central region favored pink salmon by a small margin. In the South, however, pink salmon was favored by 73 percent of all salmon-using households. As is to be expected, pink salmon was the more favored up to the $7,000 income group, at which point red salmon became more popular.

In contrast to the red vs. pink distinction, more than half of all respondents were unable to identify the variety of salmon they usually buy as it is related to the area the product comes from. A few did mention "Alaska" and a few said they used "Sockeye." Other varieties were mentioned by only a negligible number of respondents.

This is a condensation of an address by Mr. Simmons at the convention of the National Canners Association in Chicago.

Japanese to Explore West African Waters

As a result of the fishing restrictions imposed on Japanese fleets by the Russian-Japanese fishing agreement, the Noyama Prefecture Deep-Sea Fisheries Association is contemplating the partial shifting of its operations to the South Atlantic Ocean off the coasts of Nigeria and the Gold Coast in West Africa. The Association's fleet comprises 11 vessels of 70 to 80 tons each and some smaller craft.

The Association states that this area has never been explored or exploited and therefore it is not certain that profitable fishing exists there. Consequently the Association plans to send two 30-ton vessels to explore the area during the next two years.

"Tuna Cutting" for Quality

The Southern California tuna industry will play the role of its own severest critic April 12 when 30 quality control experts gather at the Lafayette Hotel in Long Beach for the sixth annual "tuna cutting."

Sponsored by the Tuna Research Foundation, the event is part of the industry's continuous program of quality improvement.

The "cutting" consists of judging hundreds of cans of tuna of all types from the year's pack, selected at random from cannery warehouses and from retail grocery shelves. The experts will base their scoring on quality, appearance, texture and pack standardization. Brand name identification is eliminated through the use of code numbers on the samples.

Southern California is the center of the U. S. tuna industry, with canneries at Terminal Island and San Diego accounting for 85 per cent of the national production.

U.S. Funds for Commercial Fisheries

The President's budget for fiscal year 1958, which begins this July 1, includes a request for $1,237,000 under the Department of the Interior regular appropriation items for activities of the Branch of Commercial Fisheries. This represents an increase of $56,200 over funds available in the previous fiscal year.

Of this amount $7,200 is budgeted to assist in the carrying out of net certification and mesh size studies under the provisions of the International Convention of Northwest Atlantic Fisheries. The balance, $49,000 is the government's contribution to the retirement fund as provided by law.

The general projects comprising the activities and the amount of funds budgeted to each is shown below:

Exploratory fishing and gear research	$ 375,000
Fishery technological studies	308,000
Commercial fishery statistics	166,000
Commercial fishery economics	48,000
Fishery market news service	300,000
Fishery statistics under Northwest Atlantic Fisheries Convention Act	40,000
	$1,237,000

In addition, varying amounts of the approximately $4,500,000 provided annually under the Saltonstall-Kennedy Act as amended by the Fish and Wildlife Act of 1956 will be available for projects approved for financing under this Act. Because Educational and Market Development activities are financed entirely from these funds they are not shown in the above budget request for regular funds.

Also included in the budget submitted to the Congress is an item of $583,000 for making grants to public and nonprofit universities and colleges as may be necessary to promote the education and training of professionally trained personnel needed in the field of commercial fishing. Of the above amount $33,000 will be used for administration of the Act.

An increase of $52,600 to administer the fisheries loan has been requested. This amount will be used for additional field supervision of loans granted and additional work in connection with the servicing of the loans by the Small Business Administration.

Australian Whaling

The Nor'West Whaling Co. Ltd., a company engaged in whaling operations on the north west coast of Western Australia, made a net profit of 248,450 for the year to March, returning 41 per cent on capital. The Company has been operating at Point Coates since 1950.

A reduced quota of whales for the 1955 -season was taken, yielding 4,162 tons of oil, compared with 4,700 tons from 600 whales in the previous season. In May, 1956, the Company completed negotiations for the purchase from the Australian Government of the whaling station at Babbage Island, Carnarvon. The consideration was $1,971,200, payable on a deposit of $784,000 and the balance over three years. Directors expect to finance the purchase from the Company's own reserves.

Yellowtail Derby

Dates for this year's $25,000 San Diego yellowtail fishing derby were announced during a dinner to pick the new queen . . . She's petite Joyce Darnell, a trim, brunet medical student at San Diego State College who was chosen from among eight beauties by a group of newspapermen as the gal they'd most like to find on the end of their fishing lines.

The $25,000 derby will be run in three periods as usual, with a fishoff after each for qualifiers . . . Derby period dates are March 30-May 25, May 26-July 20, and July 21-Sept. 14.

A station wagon, trailer and boat and motor trailer combo will be the first three prizes for each period fishoff, plus numerous lesser awards. The derby is sponsored by the San Diego Junior Chamber of Commerce.

Washington State Fishways

Sunset Falls on the south fork of the Skykomish River near Index will be the site of major fishway construction in 1957 which will add a complete river system to the salmon producing area of the state.

Fisheries Director Robert J. Schoettler has announced signing of a contract with the Pettijohn Engineering Co., Portland, Ore., for the first 400 feet of the fishway. The contract price, adjusted from the company's low bid to fit available funds, is $342,120. The job will include access road and overheal railroad crossing.

When completed the fishway will provide an easy migration route for silver and chinook salmon to the upper watershed, including the Tye, Beckler and Foss rivers. The first stage contract will permit the department to trap and haul fish around Sunset and Canyon falls until the full system can be completed.

The department will seek funds at the coming legislature to complete the Sunset Falls unit in 1958. It ultimately will rise 88 feet and have a length of 900 feet. Future plans call for another fishway at Canyon Falls, second in the series which have made most of the south fork completely inaccessible to salmon.

Hatchery reared salmon have been planted above the falls since 1954 in anticipation of the fishway completion, and so far these have been exceptionally successful.

Within 15 years this additional production will have paid for the cost of the initial fishway.

Fishing Boat Insurance Meeting

The 14th Annual Meeting of the Policy Holders of the Commercial Fishermen's Inter-Insurance Exchange was held at San Pedro, California, February 16, 1957. Due to the absence of Chairman Duzich, John J. Karmelich, legal counsel for the Exchange in San Pedro, presided. Anthony M. Ursich, legal counsel for the Exchange in the state of Washington, recorded the minutes as acting secretary.

Policy holders represented at the meeting were from not only San Pedro, but from Morro Bay, California; Astoria, Oregon; Tacoma, Seattle, and Bellingham, Washington; and Petersburg, Alaska. The following policy holders were elected to serve as members of the Board of Governors: Matt Simundich, John Burich, ohn Vilicich, Peter Cekalovich, Slavko Ivancic and Anthony DiLeva, all of San Pedro, California.

Robert S. Duzich is Chairman of the Board of Governors and Nicholas Felando is Vice-Chairman; Carmen DiMassa is treasurer, and Stanley M. Brummel is Secretary and General Manager. Branch offices of the Exchange are located in Eureka, Astoria, Tacoma, and Petersburg, Alaska.

The Commercial Fishermen's Inter-Insurance Exchange was organized by a group of commercial fish boat owners in San Pedro, in 1943, and is admitted as an insurance carrier in the states of California, Oregon, Washington and Alaska for the purpose of insuring commercial fishing vessels. The Exchange is owned and controlled by its policy holders through its elective Board of Governors and Advisory Committee.

The Commercial Fishermen's Inter-Insurance Exchange is the only reciprocal insurance exchange in the United States writing marine insurance on commercial fishing vessels. The home office of the Exchange is in the California Bank Building, 413 West Seventh Street, San Pedro, California.

Oregon Man Nominated

President Eisenhower has nominated Arnie J. Suomela to be Fish and Wildlife Commissioner in the Interior Department, a new position.

Suomela, 56, now is assistant director of the department's Fish and Wildlife Service. He is a former fisheries director for the State of Oregon. The nomination is subject to Senate confirmation.

Mexican Fishery Cooperative Eligible For Loans

During 1957 about 9 million pesos (US $720,000) will be made available through the National Cooperative Development Bank of Mexico for loans to fishery cooperatives. In addition, the fishery cooperatives will be permitted to borrow for the first time from private banks. The loans will be for the purchase of boats and gear.

The 147 Mexican fishery cooperatives with 15,000 members have the exclusive right to fish for shrimp, abalone, lobsters, oysters, totoaba, cabrilla, and pismo clams states a dispatch from the U. S. Embassy in Mexico City.

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TIDES OF THE INDUSTRY

Association of Pacific Fisheries

Herald A. O'Neill has been appointed Executive Secretary of the Association of Pacific Fisheries, succeeding Dr. Ernest D. Clark. A practicing attorney, Mr. O'Neill has been associated with the salmon industry since 1940 in the field of labor negotiations and litigation affecting the industry. Offices for the Association of Pacific Fisheries are at 302 Colman Building, Seattle 4, Washington.

Why an Anchor Holds

One of the oldest traditions of the sea, and a most erroneous one, is the idea that weight is essential to anchor holding power. The true source of holding power is fluke area, which is explained in this manner by the Danforth Anchor Company:

The first Danforth anchors were made of cast steel. The 55-pounder for instance, had flukes about 31 inches long and was an amazing anchor in its time. After much research and testing, this anchor with 31-inch flukes was made of high strength steels, weighed only 40 pounds and held better. The same anchor with 31-inch flukes made of still lighter and stronger high-tensile steels weighed only 28 pounds and held still better!

More recently, special Danforth anchors made of high strength aluminum, titanium and other special alloys prove that the same size anchor can weigh only about 14 pounds but will out-pull its original 55-pound ancestor, dig in faster, set faster and be better in every way because of its easy handling and sharp, thin flukes. Unfortunately, these special Danforths are still too costly for general use but the progress illustrated is tremendous. Imagine a 14-pound anchor that gives you more security than a 230-pound yachtsman's kedge or a 575-pound stockless!

These anchors mentioned above all have approximately the same holding power yet range in weight from 14 to 575 pounds. Nothing could prove more clearly the fact that fluke area and critical design factors are the most reliable guides to holding power with weight meaning little.

Fish and Wildlife Legislation

Initial steps to amend the Coordination Act, including provisions which would authorize the acquisition of lands at Federal water development projects for fish and wildlife purposes, have been taken by Secretary of the Interior Fred A. Seaton.

The Coordination Act, Secretary Seaton points out, is a piece of legislation of vital importance to the Nation's fish and wildlife resources, since it gives these resources an opportunity to develop hand in hand with agricultural and industrial progress.

Since State fish and game departments also have vital concern in the provisions and operation of the Coordination Act, Secretary Seaton has requested Assistant Secretary for Fish and Wildlife Ross L. Leffler to submit these suggestions to each of the State Governors for their consideration.

Besides authorizing the acquisition of land on Federal projects for fish and wildlife purposes, the proposed amendments would also authorize Federal construction agencies to incorporate in water-project plans measures for the enhancement and betterment of fish and wildlife resources.

The Secretary also noted that the President's Advisory Committee on Water Policy urged greater consideration for the conservation of fish and wildlife resources in water development projects.

Rope Resists Mildew and Rot

A new type of manila anchor and mooring rope, treated with preservative to protect against mildew, rot and marine growth, has been introduced by Tubbs Cordage Company, 200 Bush St., San Francisco, Calif.

The new Tubbs rope conforms to U.S. Coast Guard and Navy Department specifications and is specified for all their ships.

This Anchor & Mooring Rope is offered in all sizes, in full and half coils. Manufacturer's tests have proved that the preservative-treated rope will resist the deteriorating effects of mildew and rot under the most severe conditions of use and storing. It outlasts regular, untreated rope, combining dependability with economy.

Guatemala Shrimp Resources Unexplored

Regarding the existence of shrimp resources off the coasts of Guatemala, the Hunting and Fishing Section of that country's Ministry of Agriculture points out that to date no technically directed exploration has taken place by any institutions, national, private, or governmental, for the purpose of establishing the location of shrimp beds or other sea life of commercial importance which are believed to exist on the bottom of the seas which touch the shores of Guatemala. Also, no scientific investigations give knowledge of the biological characteristics of the predominant species and the productivity of these which can be exploited for the fishing industry.

Notwithstanding such a scarcity of data, various persons have endeavored to establish fishing companies on one or both coasts with a view to exploring the shrimp beds. According to the Ministry, however, none have actually been established —perhaps because there is a complete absence of boat shelters along Guatemala's Pacific coast.

The firm view was expressed that the shrimp beds do exist along the Guatemalan shores. One report indicated that sometime ago a fleet of Mexican shrimp boats caught substantial quantities of shrimp in five days from beds lying along the Guatemalan Pacific coast near the El Salvador border. The shrimp in this area were said to be blue shrimp, running about 8 or 9 to the pound heads on.

Guatemalan fishermen generally do not engage in shrimp fishing, but they might very well turn their attention to this resource if a good market for it developed.

EBB 'n FLOW

U. S. Imports of Tuna Canned in Brine

The quantity of tuna canned in brine which may be imported into the United States during the calendar year 1957 at the 12½-percent rate of duty is limited to 45,460,000 pounds (approximately 2,165,000 standard cases of 48 halves). Any imports in excess of that quantity will be dutiable at 25 percent ad valorem.

Any canned tuna classifiable under Tariff Act paragraph 718 (b) — "fish, prepared or preserved in any manner, when packed in airtight containers . . . (except fish packed in oil or in oil and other substances . . .) — which is entered, or withdrawn, for consumption during 1957 is included."

United States imports of tuna canned in brine for 1956 totaled around 38,250,000 pounds; calendar year 1955 imports totaled 34,745,000 pounds.

1956 Record of the U. S. Fisheries

The 1956 record of commercial fish, 5.2 billion pounds, was worth $363,000,000 to the fishermen, the U. S. Department of the Interior reports. This compares with $338,000,000 which the 1955 catch was worth "at boatside." The data includes the Alaska catch.

Fish and Wildlife Service reports show that the previous record was 4.9 billion pounds, taken in 1941. The 1955 catch was 4.8 billion pounds.

Total utilization of fish for all purposes—human food and industrial—in 1956 was 7.6 billion pounds, of which more than a third, or 2.4 billion pounds, round weight, were imports.

Analysis of the annual catch over sharp increase in the amount of insharp increase in theamount of industrial fish being taken by American fishermen—one billion pounds in ten years—but a decline in the amount of fish harvested for human food—a 400 million pound drop from the 1947-50 average.

Segments of the fishing industry, particularly the New England groundfish producers and the Pacific Coast tuna men, point out that the food fish catch is far below the production capabilities of the American fishing fleets. Tie-up of fishing craft in some areas for as high as 90 days because of lack of market is cited as evidence of this. The tuna fleet, which once numbered 214 large clippers now numbers only 153 because of these long periods of inactivity.

The per capita annual consumption of fish has remained steady at between 10 and 11 pounds. The imports of fish for human food have increased from 21 percent of the totals in 1947-50 to 35 percent in 1956.

Exploratory Cruise

Experimental midwater trawling is the objective of a 7-week cruise by the U. S. Fish and Wildlife Service's exploratory fishing vessel *John N. Cobb*, which left Seattle on February 25. The experimental fishing will be conducted off the coasts of Washington and British Columbia, and it is planned that the vesssel will return to Seattle for a time in the middle of the cruise for anticipated modifications to the fishing gear and other experimental equipment.

This is the first in a series of midwater trawling cruises scheduled during 1957 to determine the practicability of a commercial midwater fishery for such food fishes as Pacific Ocean perch, cod, ling cod and other species which are known to spend at least part of their time off the bottom. If a successful midwater trawling method can be developed, it will open up vast new areas for commercial fishing, especially over rough and rocky bottom where the bottom trawlers cannot now operate.

First trials will be conducted using a 50-foot square opening nylon midwater trawl designed and tested at the Service's gear research station at Coral Gables, Florida. An acoustic depth telemeter will be employed to accurately determine and control the depth of the net at all times. A recording Sea Scanar will be the principal instrument used for locating midwater schools of fish.

A previous test of this equipment during a cruise last year produced promising results. Catches of rockfish and hake were taken in midwater in quantities up to 5,000 pounds per 20-minute tow. Improvements in the fishing gear and electronic equipment have been made, which should increase their effectiveness. Considerable time will be spent during this cruise in studying the movements of fish in midwater and in learning to recognize different species on the echo-recording equipment, as well as in testing and improving the fishing gear itself.

Japan's Salmon Exports

The short pack of canned salmon by the United States and Canada has resulted in a strong demand for the Japanese pack and boosted estimates for exports by the Japanese Salmon Sales Company, the sole export agent. Exports to these two countries originally estimated at 535,000 cases (48 1-lb. cans) have been revised upwards to 700,000 cases. The additional exports were substracted from the original allotment made to countries other than the United States, Canada, and the United Kingdom.

High Record Set On Can Production

Can production in the United States reached a record 39.4 billion containers the first 11 months of 1956, an increase of approximately 2.7 billion units over the same period in 1955, it was reported by American Can Company.

Major factors in this over-all industry increase—of 7.2 per cent—were rises in the use of cans for pet foods, meats, fish and seafoods, fruits and vegetables, coffee, and beer, the company said.

Production of cans for pet food from January through November of last year rose 16.4 per cent over the comparable period in 1955, according to Canco. Cans for meat rose 13.6 per cent over the same period.

Other notable can-production increases were: 10:3 per cent for fruits, fruit juices and vegetables; 9.2 per cent for fish and seafood; 6 per cent for coffee and 6 per cent for beer, the company pointed out.

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Fish and Sea Food Distributors

There were 1,798 wholesale establishments in continental United States at the end of 1954 primarily engaged in buying and selling fish and sea food. Sales of these distributors totaled $625 million during the year or $348,000 per annum per establishment according to the Bureau of the Census, U.S. Department of Commerce. This census covered Whole-Sale, Retail, and Selected Service Trades throughout continental United States, Alaska, and Hawaii.

In the West California led with 127 establishments showing a volume of $57,977,000; Washington 51 and $14,883,000; Oregon 22 and $4,414,-000.

Migratory Bird Conservation Program

The Migratory Bird Conservation Commission has authorized the acquisition of 4,409 acres of land as additions to nine national wildlife refuges, announced U.S. Secretary of the Interior Fred A. Seaton. Also authorized was the leasing of 2,728 acres for two refuges.

All of the refuges for which the additional land is being provided are strategically located in their respective flyways, Secretary Seaton said. These include 2,293 acres to be added to the Columbia National Wildlife Refuge in the state of Washington.

Year of Activities

(Continued from page 5)

A new research unit, Ocean Research, located at Stanford University, was opened in September 1955, to study the relationships of climate and ocean conditions to the sudden fluctuations in numbers of commerial fish.

Research continued on sockeye salmon "virus" and on the blue-sac disease.

Management practice begun at Yellowstone Lake in 1953 resulted in 1955 in the highest fishing success since 1949. There were 349,757 fish caught in 520,898 hours of fishing, or one fish for each hour and a half of effort.

The Lower Columbia River Fisheries Development Program, in its eighth year, brought more evidence of the soundness of that program. Eleven hatcheries have been completed since the program started and two more—at Eagle Creek, Oregon, and Carson, Washington—were nearing completion when the fiscal year closed.

Seal studies indicated that the fur seal is not a salmon predator. Out of 205 stomachs studied during the project only one of them showed any evidence of salmon. Seal hookworm studies were continued.

A study made by the University of Alaska showed that sport fishing is a multimillion dollar annual business in Alaska. The big problem facing fish and wildlife management there is to spread the hunting and fishing pressures which are concentrating on the more accessible areas.

Waterfowl activities received a large share of the States attention on wildlife restoration, with 44 States working on 150 projects. Thirty-four States spent $2,500,000 on farm-game habitat improvement; 16 States and Alaska trapped and transplanted numerous animals such as deer, antelope, snowshoe hares; 32 States purchased 135,000 acres of big game range and leased another 114,000. Forty-four States, Alaska, Hawaii, Puerto Rico and the Virgin Islands conducted investigations on many of their respective problems. ★

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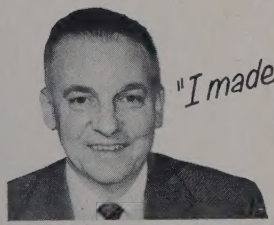

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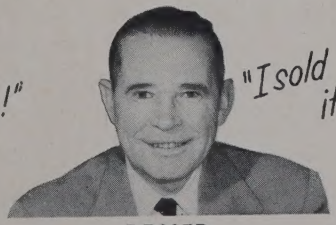

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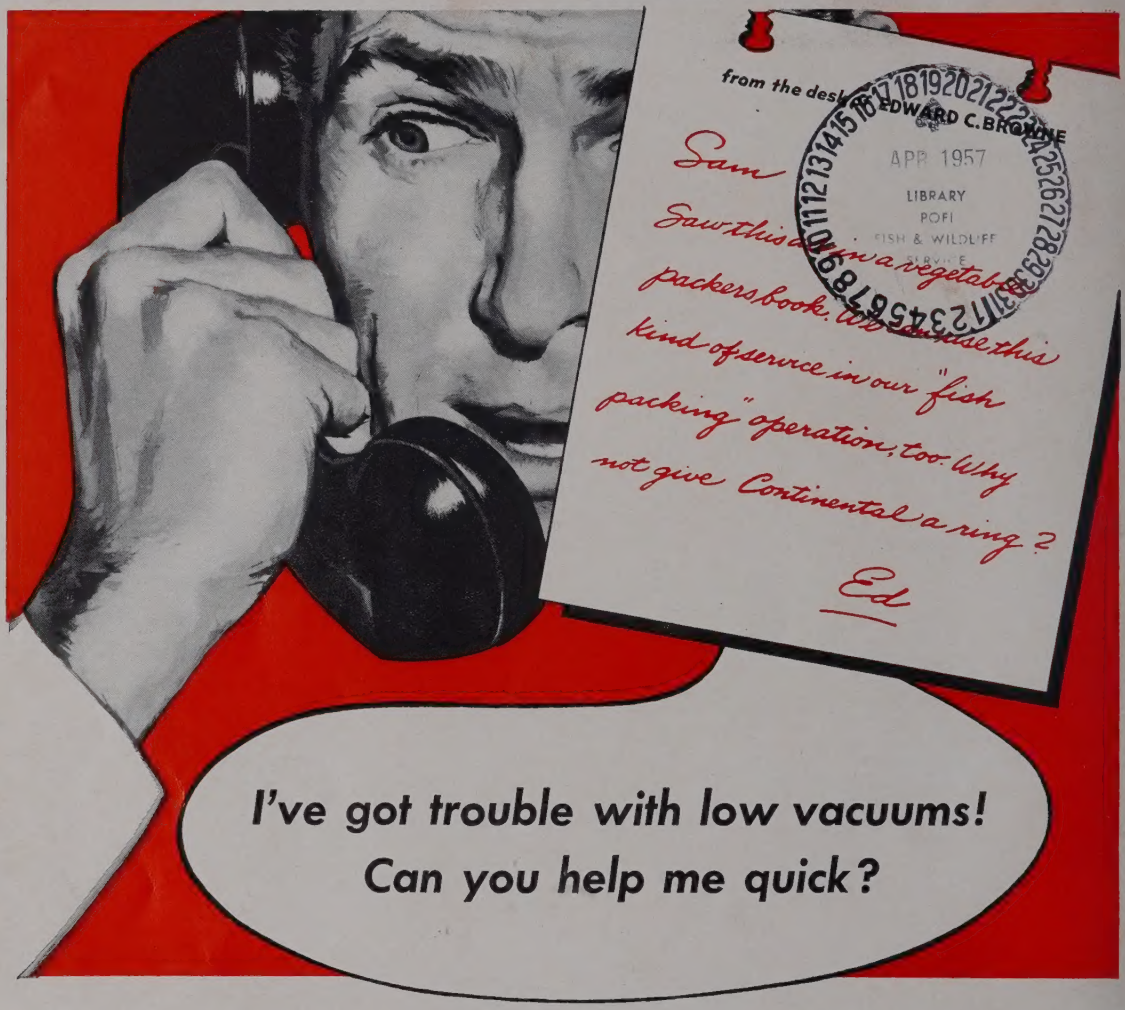
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Here's how Tailor-Made Package Service kept a canning line rolling for a Midwest packer

The time: 11:30 Saturday morning. Low vacuums were causing serious trouble at a Midwest cannery. Working fast, the plant manager phoned Continental. He needed a valve repair job fast.

Things looked tough. The right valves were not in stock at the moment. There was only one thing left to do—rush over a complete 23DS closer until the canner's own machine could be fixed.

At 3:00 p.m. that afternoon, the 23DS was in the customer's plant. Installed that night, it went to work Sunday morning and never missed a stroke.

What can we do for you?

Naturally, not all case histories of Tailor-Made Package Service are as dramatic as this one. But whatever your needs, Continental engineers, scientists and technical people are available to help you—and eager to do things your way. Call soon.

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